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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/957,463	09/21/2001	Andreas Ebert	1748X/50407	2591
7590 07/13/2004 CROWELL & MORING, L.L.P. P.O. Box 14300 Washington, DC 20044-4300			EXAMINER KERNS, KEVIN P	
			ART UNIT 1725	PAPER NUMBER
DATE MAILED: 07/13/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/957,463	Applicant(s) EBERT ET AL.	
	Examiner Kevin P. Kerns	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-14 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/14/03 & 2/13/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicants' election of Group I (claims 1-11 and 13) in the reply filed on June 15, 2004 is acknowledged. Because the applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the evaporation unit that is entirely surrounded by the chambers (claim 2) and the fuel cell system (claim 13) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The

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replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because Figure 3 is not described in detail in the DETAILED DESCRIPTION. Furthermore, it is unclear how Figure 3 differs from Figure 2 (the only difference appears to be the 3 vertical lines within evaporation unit 2 of Figure 3 – what do these 3 vertical lines represent?). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: there is no disclosure of an evaporation unit that is entirely surrounded by the chambers (claim 2).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claim 8, it is unclear how the thermal coupling is “designed to be variable in an inversely proportional manner to the temperature gradient”. What drawing structures/disclosures would clarify this “inversely proportional” relationship?

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 1-11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Schuessler et al. (EP 0 878 442 (German text) – the applicants are also referred to equivalent US Patent No. 6,428,758 for translation purposes).

Schuessler et al. disclose a reforming reactor and process of operating the reactor for producing high purity hydrogen from reforming of liquid hydrocarbons (including methanol) for a fuel cell system, in which the reactor includes a reactor housing 13 that contains a plurality of parallel chambers (6,7,10) containing/adjacent a catalyst layer 2; and a common evaporation unit (evaporation layer 1) in thermally conductive contact with the plurality of chambers (6,7), such that the evaporation unit is arranged on an edge region of the chambers in a rigidly or movably connected manner and is surrounded by chambers (6,7,10) in reactor housing 13, wherein the thermal conductive coupling varies with a temperature gradient in the evaporation unit as measured by temperature sensors 11,12 (abstract; and Figure -- also see abstract; column 1, lines 11-27; column 3, lines 13-67; column 4, lines 1-58; column 5, line 3 through column 7, line 34; and Figure of US 6,428,758).

9. Claims 1, 3, 5, 9-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Isomura et al. (US 5,741,474).

Isomura et al. disclose a process and apparatus for producing high purity hydrogen from hydrocarbons (including methanol) for a fuel cell system, in which the apparatus includes a plurality of chambers containing a catalyst 12 (reforming chamber 11 is divided by hydrogen separating membrane 13, forming separated-gas chamber 14 with parallel channels); and a common evaporation unit (vaporization unit 10) rigidly connected and arranged on an edge region of the plurality of chambers (thermally conductive contact), such that the evaporation unit is partially surrounded by the plurality of chambers (abstract; column 1, lines 6-12; column 2, lines 9-67; column 3, lines 11-47 and 56-67; column 4, lines 1-12 and 19-67; column 5, lines 1-67; column 6, lines 1-45; and Figures 1 and 2).

10. Claims 1-11 and 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Lamla et al. (JP 2000-237582 – complete translation from JPO website provided – also equivalent to EP 1 031 374 (German text)).

Lamla et al. disclose a device for utilizing heat generated by a catalytic reaction for producing hydrogen from hydrocarbons (including methanol) for a fuel cell system, in which the device includes a reformer 2 comprising a reactor housing 20 that contains a plurality of parallel chambers (ducts 11,12,13 separated by septum 10) containing and adjacent to a catalyst layer 2a; and a common evaporation unit (evaporation layer 1) in thermally conductive contact with the plurality of chambers (11,12,13), such that the evaporation unit is arranged on an edge region of the chambers in a rigidly or movably connected manner and is entirely surrounded by chambers (11,12,13) in reactor

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housing 20, wherein the thermal conductive coupling varies with a temperature gradient in the evaporation unit, as controlled by cooling/preheating systems 3,5,7 (abstract; paragraphs [0001], [0004], and [0009]-[0039] of JPO translation; and Figures 1-6).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 7/10/04*
Examiner
Art Unit 1725

KPK
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July 10, 2004